

EPA DRAFT 2/8/2018

**Subject to Management Review & Approval
(Responding to Red/Line Strikeout dated 2/5/2018)**

REMEDIAL DESIGN

STATEMENT OF WORK

SAN JACINTO RIVER WASTE PITS SUPERFUND SITE

Channelview, Harris County, State of Texas

EPA Region 6

**(EPA Draft From Model RD SOW, For Use with RD Administrative Settlement Agreement
and Order on Consent)**

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	COMMUNITY INVOLVEMENT	1
3.	REMEDIAL DESIGN	2
4.	REPORTING	11
5.	DELIVERABLES	12
6.	DELIVERABLES SCHEDULE	19
7.	STATE PARTICIPATION	21
8.	REFERENCES	21

a) INTRODUCTION

a.1 Purpose of the SOW. This Statement of Work (SOW) sets forth the requirements for implementing the Remedial Design (RD) for all components of the remedial action set forth in the Record of Decision (ROD) for the San Jacinto River Waste Pits Site (Site). The ROD for the Site was signed by the Administrator of the U.S. Environmental Protection Agency (EPA) on October 11, 2017. Respondents, will develop the RD, for EPA approval, consistent with the ROD, the Administrative Order on Consent (AOC) to which this SOW is attached, and EPA Superfund Remedial Design and Remedial Action Guidance (OSWER Directive 9355.0-4A) for designing remedial actions. The ROD outlines conceptual design level approaches for the cleanup remedy, recognizing the need for flexible, implementable, and cost-effective final engineering designs to achieve ROD performance standards.

The AOC and this SOW do not require the Respondents to implement the remedial action remedy. As discussed in the ROD, changes to the selected remedy may be documented in the form of a memorandum in the Administrative Record file, an Explanation of Significant Differences, or a ROD Amendment.

a.2 Structure of the SOW.

- Section b) (Community Involvement) sets forth EPA's and Respondents' responsibilities for community involvement.
- Section 3) (Remedial Design) sets forth the process for developing the RD, which includes the submission of specified primary deliverables.
- Section k) (Reporting) sets forth Respondents' reporting obligations.
- Section l) (Deliverables) describes the content of the supporting deliverables and the general requirements regarding Respondents' submission of, and EPA's review of, approval of, comment on, and/or modification of, the deliverables.
- Section m) (Deliverables Schedule) sets forth the schedule for submitting the primary deliverables, specifies the supporting deliverables that must accompany each primary deliverable, and sets forth the schedule of milestones regarding the completion of the RD.
- Section 0 (State Participation) addresses State participation.
- Section o) (References) provides a list of references, including URLs.

a.3 The terms used in this SOW that are defined in CERCLA, in regulations promulgated under CERCLA, or in the Administrative Settlement Agreement and Order on Consent ("Settlement"), have the meanings assigned to them in CERCLA, in such regulations, or in the Settlement, except that the term "Paragraph" or "¶" means a paragraph of the SOW, and the term "Section" means a section of the SOW, unless otherwise stated.

b) COMMUNITY INVOLVEMENT

b.1 Community Involvement Responsibilities

- (a) EPA has the lead responsibility for developing and implementing community involvement activities at the Site. Previously [(during the RI/FS phase), EPA developed a Community Involvement Plan (CIP) for the Site. Pursuant to 40 C.F.R. § 300.435(c), EPA shall review the existing CIP and determine whether it should be revised to describe further public involvement activities during appropriate for the Work that are not already addressed or provided for in the existing CIP. Further activities may include distribution of draft documents to the Community Advisory Committee generated pursuant to this SOW..
- (b) If requested by EPA, Respondents shall participate assist in community involvement activities, including participation assistance in (1) the preparation of information regarding the Work for dissemination to the public, with consideration given to including mass media and/or Internet notification, and (2) public meetings that may be held or sponsored by EPA to explain activities at or relating to the Site. Respondents' support of EPA's community involvement activities may include providing online access to initial submissions and updates of deliverables to (1) any Community Advisory Groups, (2) any Technical Assistance Grant recipients and their advisors, and (3) other entities to provide them with a reasonable opportunity for review and comment. EPA reviewed RD deliverables set forth in this SOW, as defined in Section 3. EPA may describe in its CIP Respondents' responsibilities for community involvement activities. All community involvement activities conducted by Respondents at EPA's request are subject to EPA's oversight. Upon EPA's request, Respondents shall establish a community information repository at or near the Site to house one copy of the administrative record.
- (c) **Respondents' CI Coordinator.** Respondents shall, within 9045 days of the effective date of the AOC, designate and notify EPA of Respondents' Community Involvement Coordinator (Respondents' CI Coordinator). Respondents may hire a contractor for this purpose. Respondents' notice must include the name, title, and qualifications of the Respondents' CI Coordinator. Respondents' CI Coordinator is responsible for providing support regarding EPA's community involvement activities, including coordinating with EPA's CI Coordinator regarding responses to the public's inquiries about the Site.

3) REMEDIAL DESIGN

- (d)
- (e) **Technical Workgroups:** The technical workgroups (TWGs) will provide technical expertise to assist Respondents in the development and evaluation of

design plans and options. The TWGs will collaboratively develop proposals for consideration in preparing deliverables for EPA review.

- (1) The TWGs shall consist of representatives designated by EPA and by the Respondents. The EPA and Respondents shall designate the TWG representatives within 7 days of the Effective Date of the Settlement, and the TWGs shall begin their meetings within two weeks following EPA approval of the representatives.
- (2) All TWG representatives shall have demonstrated expertise and experience within the technical realm being addressed by the TWGs, as determined by EPA.
- (3) TWG representatives shall work collaboratively to develop proposed resolutions to technical issues. and will present the resolution to EPA and Respondents for incorporation into the RD.
- (4) The TWGs shall meet regularly unless otherwise determined by EPA, until the technical issue is resolved.
- (5) EPA and the Respondents will support the work of the TWGs by providing background information, data, and any other relevant supporting considerations related to the technical issue being addressed.
- (6) The personnel participating in a TWG may be different from one TWG to another, depending on the expertise needed to appropriately address the technical issue.
- ~~(7) TWG representatives shall not have past or ongoing litigation efforts/interests that create a conflict of interest with the Respondents and/or the Site~~
- (8) TWG representatives shall not be a designated expert in current litigation related to this Site.
- ~~(9)~~
- (10) Key elements of the RD Work that may require workgroup collaboration shall include, but are not limited to the following:
- (11) Verification of Achievement of Engineering Performance Standards – The purpose of this workgroup is to refine the points of compliance and other key performance metrics that the remedy must achieve during and after construction in order to meet the Performance Standards included in the ROD.

(A) Members of this ~~Organizations to be represented in this~~ TWG ~~may~~ ~~shall~~ include, but are not limited to the following:

- ~~ERDC, including Paul Schroeder~~ U.S. Army Corps of Engineers
- EPA and their contractors ~~CSTAG, including Karl Gustavson~~
- State and local agencies ~~TCEQ~~
- Respondents' technical representatives

~~(ii) — Remedy Performance Standards — The purpose of this workgroup is to refine the points of compliance and other key performance metrics that the remedy must achieve during and after construction, including sediment/soil remedial action levels, and preventing activities that would result in any releases to receiving waters.~~

~~(A) — Representatives of this TWG shall have demonstrated expertise and experience translating risk-based cleanup levels into appropriate remedial action levels and/or determining appropriate technical requirements for no releases to the environment.~~

~~(B) — Organizations to be represented in this TWG shall include, but are not limited to the following:~~

~~(C) — EPA Contaminated Sediment Technical Advisory Group (CSTAG), including Karl Gustavson~~

~~(D) — U.S. Army Engineer Research and Development Center (ERDC), including Paul Schroeder~~

~~(E) — Texas Commission on Environmental Quality (TCEQ)~~

~~(F) — Respondents' technical representatives~~

(iii) Engineering Approaches, Best Management Practices, and Contingency Measures – The purpose of this workgroup is to identify implementable and cost-effective engineering measures for achieving remedy performance standards described in the ROD, and preventing activities that would result in any unacceptable releases to receiving waters .

(A) Members of this ~~Organizations to be represented in this~~ TWG ~~may~~ ~~shall~~ include, but are not limited to the following:

- ~~ERDC, including Paul Schroeder~~ U.S. Army Corps of Engineers
- EPA and their contractors ~~CSTAG, including Karl Gustavson~~
- State and local agencies TCEQ
- Respondents' technical representatives

(iv) **Property Owner Stakeholder Access** – The purpose of this workgroup is to engage property owners and identify **property issues site constraints** that may affect remedy implementation.

(A) **Members Representatives** of this TWG ~~may shall~~ include those property owners, easement holders, or those who control access that may be directly affected by the remedial action, **as well as** representatives of EPA and Respondents.

~~(B) Organizations to be represented in this TWG shall include, but are not limited to the following:~~

- ~~• Parties with ownership interest(s) within prospective remedial action areas~~

~~(C) EPA's CI Coordinator~~

~~(D) Respondents' CI Coordinator~~

(f)

(g) RD Sequencing Plan. Respondents shall submit an RD Sequencing Plan for EPA approval. The RD Sequencing Plan shall include a description of the overall management strategy for performing the RD, including a sequencing plan for phasing of Pre-design Investigations (PDI), design, and construction, if applicable.

b.2 RD Work Plan. Respondents shall submit a Remedial Design (RD) Work Plan (RDWP) for EPA approval. The RDWP must include:

- (a) Plans for implementing all RD activities identified in this SOW, in the RDWP, or required by EPA to be conducted to develop the RD;

(i)

- c) A description of the proposed general approach to contracting, construction, operation, maintenance, and monitoring of the Remedial Action (RA) as necessary to implement the Work;
 - d) A description of the responsibility and authority of all organizations and key personnel involved with the development of the RD;
 - e) Descriptions of any areas requiring clarification and/or anticipated problems (e.g., data gaps);
 - f) Description of the ~~any~~ proposed pre-design investigation;
 - g) Description of any proposed treatability study;
 - h) Descriptions of any applicable permitting requirements and other regulatory requirements;
 - i) Description of plans for obtaining access in connection with the Work, such as property acquisition, property leases, and/or easements; and
 - j) The following supporting deliverables described in ¶ 1.6 (Supporting Deliverables): Health and Safety Plan; and Emergency Response Plan.
- e) ~~k~~ The RDWP shall include a project schedule for each major activity and submission of deliverables to be generated during the RD Work. ~~The RDWP shall document the responsibility and authority of all organizations and key personnel involved with the RD Work, and shall include a description of qualifications of key personnel directing the RD Work, including contractor and technical workgroup personnel.~~
- j.1 ~~Pre-Design Investigation.~~ Respondents shall meet regularly with EPA to discuss design issues as necessary, as directed or determined by EPA.
- j.2 **Pre-Design Investigation.** Respondents shall submit Pre-Design Investigation Work Plans (PDIWP), including the **First Phase PDIWP**, based on the RD Sequencing Plan for EPA approval. The PDIWP shall provide detailed descriptions for pre-design field and analytical evaluations of the Site, consisting of a Sampling and Analysis Plan (SAP), a Quality Assurance Project Plan (QAPP), and a Health and Safety Plan (HSP). The PDI shall be geographically limited to the ~~prospective remedial action areas at Preliminary Site Perimeter (e.g., capping and southern impoundment areas as generally depicted on Figure 34 of the ROD,).~~ The PDIWP shall incorporate existing baseline bathymetric/topographic and related surveys, or shall propose detailed modifications or additions to such surveys to be performed by Respondents. Respondents shall submit any necessary modifications to these documents for review and approval prior to implementing the pre-design activities. Upon approval of the PDIWP by EPA, Respondents shall perform the tasks set forth therein in accordance with the applicable schedules in the PDIWP.

~~The overall objectives of the pre-design investigations include:~~

j.3 ~~Filling in~~ The purpose of the Pre-Design Investigation (PDI) is to address data gaps identified in the RI/FS by conducting additional field investigations.

(a) **PDIWP.** Respondents shall submit a PDI Work Plan (PDIWP) for EPA approval. The PDIWPs must include:

- (1) An evaluation and summary of existing data and description of data gaps;
- (2) A sampling plan including media to be sampled, contaminants or parameters for which sampling will be conducted, location (areal extent and depths), and number of samples.
- ~~• following examination of existing data consistent with engineering design performance standards;~~
- 3) Refining the area and volume of materials requiring remediation; and
- 4) Providing sufficiently comprehensive data to evaluate implementable and cost-effective engineering approaches for excavation, **residual management**, dewatering, water treatment, transportation, and/or disposal options.
- 5) Obtaining baseline conditions for remedy performance monitoring.

Sampling stations shall be located to optimize characterization of the volume of materials likely requiring remediation, consistent with ROD requirements. The PDIWP shall identify the sample locations and the basis for their selection consistent with engineering design performance standards.

Raw data and validated sample results shall be submitted in accordance with provisions of the AOC. As part of the pre-design investigation, Respondents shall: ~~evaluate existing data and the data collected in the pre-design sampling to meet the following data evaluation objectives:~~

- Refine the area and volume of material requiring remediation through spatial resolution of surface and subsurface chemical concentration distributions;
- Define the physical and chemical nature and features of material necessary for implementation of the remedy described in the ROD;
- Assess potential contaminant mobility and water treatment requirements;
- Establish baseline conditions of those features that may be altered during the remedial action; and
- Determine additional data needed for the RD.

- (b) Following implementation of the PDIWP, Respondents shall submit a PDI Evaluation Report **for EPA approval**. This report must include:
 - (1) Summary of the investigations performed;
 - (2) Summary of investigation results;
 - (3) Summary of validated data (i.e., tables and graphics);
 - (4) Data validation reports and laboratory data reports;
 - (5) Narrative interpretation of data and results;
 - (6) Results of statistical and modeling analyses;
 - (7) Photographs documenting the work conducted; and
 - (8) Conclusions and recommendations for RD, including design parameters and criteria.
- (c) EPA may require Respondents to supplement the PDI Evaluation Report and/or to perform additional pre-design studies.

j.4 Treatability Study

- (a) **As set forth in the EPA-approved RDWP, Respondents may perform a Treatability Study (TS) for the purpose of developing information in support of the RD.**
- (b) **As appropriate** **If required by EPA,** Respondents shall submit a TS Work Plan (TSWP) for EPA approval. Respondents shall prepare the TSWP in accordance with EPA's *Guide for Conducting Treatability Studies under CERCLA, Final* (Oct. 1992), as supplemented for RD by the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995).
- (c) Following completion of the TS, Respondents shall submit a TS Evaluation Report for EPA **approval comment.**
- (d) For the purposes of this section, a treatability study may include a pilot study.

j.5 Preliminary (30%) RD. Respondents shall submit a Preliminary (30%) RD for EPA's comment. The Preliminary RD must include:

- (a) A design criteria report, as described in the *Remedial Design/Remedial Action Handbook*, EPA 540/R-95/059 (June 1995);
- (b) Preliminary drawings and specifications;

- (c) Descriptions of permit requirements, if applicable;
- (d) Preliminary Operation and Maintenance (O&M) Plan and O&M Manual;
- (e) A description of how the RA will be implemented in a manner that minimizes environmental impacts in accordance with EPA's *Principles for Greener Cleanups* (Aug. 2009);
- (f) A description of monitoring and control measures to protect human health and the environment, such as air monitoring and dust suppression, during the RA; and

j.6 Updates of all supporting deliverables required to accompany the RDWP and the following additional supporting deliverables described in ¶ 1.6 (Supporting Deliverables): Field Sampling Plan; Quality Assurance Project Plan; Site Wide Monitoring Plan; Construction Quality Assurance/Quality Control Plan; Transportation and Off-Site Disposal Plan; O&M Plan; O&M Manual; and Institutional Controls Implementation and Assurance Plan. **Pre-Final (90%) RD.** Respondents shall submit the Pre-final (90%) RD for EPA's comment. The Pre-final RD is a continuation and expansion of the previous design submittal and shall address EPA's comments regarding the Preliminary RD. The Pre-final RD will serve as the approved Final (100%) RD if EPA approves the Pre-final RD without comments. The Pre-final RD shall include:

- (a) A complete set of construction drawings and specifications that are: (1) certified by a registered professional engineer; (2) suitable for procurement; and (3) follow the Construction Specifications Institute's Master Format 2012;
- (b) A survey and engineering drawings showing existing Site features, such as elements, property borders, easements, and Site conditions;
- (c) Pre-Final versions of the same elements and deliverables as are required for the Preliminary RD;
- (d) A specification for photographic documentation of the RA; and
- (e) Updates of all supporting deliverables required to accompany the Preliminary RD.

j.7 Final (100%) RD. Respondents shall submit the Final (100%) RD for EPA approval. The Final RD shall address EPA's comments on the Pre-final RD and must include final versions of all Pre-final RD deliverables.

j.8 Emergency Response and Reporting

- (a) **Emergency Response and Reporting.** If any event occurs during performance of the RD Work that causes or threatens to cause a release of Waste Material on, at, or from the Site and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, Respondents shall: (1) immediately take all appropriate action to prevent, abate, or minimize such release or threat of release; (2) immediately notify the

authorized EPA officer (as specified in ¶ j.8(c)) orally; and (3) take such actions in consultation with the authorized EPA officer and in accordance with all applicable provisions of the Health and Safety Plan, the Emergency Response Plan, and any other deliverable approved by EPA under the SOW.

- (b) **Release Reporting.** Upon the occurrence of any event during performance of the RD Work that Respondents are required to report pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004, Respondents shall immediately notify the authorized EPA officer orally.
- (c) The “authorized EPA officer” for purposes of immediate oral notifications and consultations under ¶ j.8(a) and ¶ j.8(b) is the EPA Project Coordinator, or the EPA Alternate Project Coordinator (if the EPA Project Coordinator is unavailable), or the EPA [Emergency Response Unit, 866-372-7745], Region 6 (if neither EPA Project Coordinator is available).
- (d) For any event covered by ¶ j.8(a) and ¶ j.8(b), Respondents shall: (1) within 14 days after the onset of such event, submit a report to EPA describing the actions or events that occurred and the measures taken, and to be taken, in response thereto; and (2) within 30 days after the conclusion of such event, submit a report to EPA describing all actions taken in response to such event.
- (e) The reporting requirements under ¶ j.8 are in addition to the reporting required by CERCLA § 103 or EPCRA § 304.

j.9 Off-Site Shipments

- (a) Respondents may ship hazardous substances, pollutants, and contaminants from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents will be deemed to be in compliance with CERCLA § 121(d)(3) and 40 C.F.R. § 300.440 regarding a shipment if Respondents obtain a prior determination from EPA that the proposed receiving facility for such shipment is acceptable under the criteria of 40 C.F.R. § 300.440(b).
- (b) Respondents may ship Waste Material from the Site to an out-of-state waste management facility only if, prior to any shipment, they provide notice to the appropriate state environmental official in the receiving facility’s state and to the EPA Project Coordinator. This notice requirement will not apply to any off-Site shipments when the total quantity of all such shipments does not exceed 10 cubic yards. The notice must include the following information, if available: (1) the name and location of the receiving facility; (2) the type and quantity of Waste Material to be shipped; (3) the schedule for the shipment; and (4) the method of transportation. Respondents also shall notify the state environmental official referenced above and the EPA Project Coordinator of any major changes in the shipment plan, such as a decision to ship the Waste Material to a different out-of-

state facility. Respondents shall provide the notice as soon as practicable after the award of the contract and before the Waste Material is shipped.

- (c) Respondents may ship Investigation Derived Waste (IDW) from the Site to an off-Site facility only if they comply with Section 121(d)(3) of CERCLA, 42 U.S.C. § 9621(d)(3), 40 C.F.R. § 300.440, *EPA's Guide to Management of Investigation Derived Waste*, OSWER 9345.3-03FS (Jan. 1992), and any IDW-specific requirements contained in the ROD. Wastes shipped off-Site to a laboratory for characterization, and RCRA hazardous wastes that meet the requirements for an exemption from RCRA under 40 CFR § 261.4(e) shipped off-site for treatability studies, are not subject to 40 C.F.R. § 300.440.

j.10 Notice of Work Completion

- (a) When EPA determines, after EPA's review of the Final 100% RD under ¶ j.7 (Final (100%) RD), that all Work has been fully performed in accordance with this Settlement, with the exception of any continuing obligations j.8, EPA will provide written notice to Respondents. If EPA determines that any such Work has not been completed in accordance with this Settlement, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents modify the RD Work Plan if appropriate in order to correct such deficiencies.
- (b) Respondents shall **prepare and implement** the modified and approved RD Work Plan and shall submit a modified Final 100% Report for EPA approval in accordance with the EPA notice. If approved, EPA will issue the Notice of Work Completion.
- (c) Issuance of the Notice of Work Completion does not affect the following continuing obligations: (1) obligations under Sections [VIII] (Property Requirements), [IX] (Access to Information), and [X] (Record Retention of the Settlement; and (4) reimbursement of EPA's Future Response Costs under Section [XII] (Payment of Response Costs) of the Settlement.]

k) REPORTING

k.1 Progress Reports. Respondents shall submit progress reports to EPA on a monthly basis, or as otherwise requested by EPA, until issuance of Notice of Work Completion pursuant to ¶ 3.9, unless otherwise directed in writing by EPA's Project Coordinator. The reports must cover all activities that took place during the prior reporting period, including:

- (a) The actions that have been taken toward achieving compliance with the Settlement;
- (b) A summary of all results of sampling, tests, data validation, and all other data received or generated by Respondents;
- (c) A description of all deliverables that Respondents submitted to EPA;

- (d) A description of all activities scheduled for the next month;
- (e) Information regarding percentage of completion, unresolved delays encountered or anticipated that may affect the future schedule for implementation of the Work, and a description of efforts made to mitigate those delays or anticipated delays;
- (f) A description of any modifications to the work plans or other schedules that Respondents have proposed or that have been approved by EPA; and
- (g) A description of all activities undertaken in support of the Community Involvement Plan (CIP) during the reporting period and those to be undertaken in the next month.

k.2 Notice of Progress Report Schedule Changes. If the schedule for any activity described in the Progress Reports, including activities required to be described under ¶ k.1(d), changes, Respondents shall notify EPA of such change at least seven days before performance of the activity.

I) DELIVERABLES

1.1 Applicability. Respondents shall submit deliverables for EPA approval or for EPA comment as specified in the SOW. If neither is specified, the deliverable does not require EPA's approval or comment. Paragraphs 1.2 (In Writing) through 1.4 (Technical Specifications) apply to all deliverables. Paragraph 1.5 (Approval of Deliverables) applies to any deliverable that is required to be submitted for EPA approval.

1.2 In Writing. All deliverables under this SOW must be in writing unless otherwise specified.

1.3 General Requirements for Deliverables

- (a) Except as otherwise provided in this Order, Respondents shall direct all deliverables required by this Order to the EPA Project Coordinator: Gary Baumgarten, 1445 Ross Ave, Suite 1200, Dallas, Texas, 75202-2733; (214) 665-6749 Baumgarten,gary@epa.gov.
- (b) All deliverables provided to the State in accordance with ¶ 0 (State Participation) shall be directed to Katie Delbecq, Project Manager, Superfund Section, Office of Waste, Remediation Division, Texas Commission on Environmental Quality, P.O. Box 13087, MC136 Austin, Texas 78710-3087.
- (c) All deliverables must be submitted by the deadlines in the Deliverables Schedule and the approved schedules in the RDWP, as applicable. Respondents shall submit all deliverables to EPA in electronic form. Technical specifications for sampling and monitoring data and spatial data are addressed in ¶ 1.4. All other deliverables shall be submitted to EPA in the electronic form specified by the EPA Project Coordinator. If any deliverable includes maps, drawings, or other

exhibits that are larger than 8.5” by 11”, Respondents shall also provide EPA with paper copies of such exhibits.

1.4 Technical Specifications

- (a) **Raw sampling data and** final validated sampling and monitoring data should be submitted in standard Electronic Data Deliverable (EDD) format. Other delivery methods may be allowed if electronic direct submission presents a significant burden or as technology changes.
- (b) Spatial data, including spatially-referenced data and geospatial data, should be submitted: (1) in the ESRI File Geodatabase format; and (2) as unprojected geographic coordinates in decimal degree format using North American Datum 1983 (NAD83) or World Geodetic System 1984 (WGS84) as the datum. If applicable, submissions should include the collection method(s). Projected coordinates may optionally be included but must be documented. Spatial data should be accompanied by metadata, and such metadata should be compliant with the Federal Geographic Data Committee (FGDC) Content Standard for Digital Geospatial Metadata and its EPA profile, the EPA Geospatial Metadata Technical Specification. An add-on metadata editor for ESRI software, the EPA Metadata Editor (EME), complies with these FGDC and EPA metadata requirements and is available at <https://edg.epa.gov/EME/>.
- (c) Each file must include an attribute name for each site unit or sub-unit submitted. Consult <https://www.epa.gov/geospatial/geospatial-policies-and-standards> for any further available guidance on attribute identification and naming.
- (d) Spatial data submitted by Respondents does not, and is not intended to, define the boundaries of the Site.

1.5 Approval of Deliverables

- (a) **Initial Submissions**
 - (1) After review of any deliverable that is required to be submitted for EPA approval under the Settlement or the SOW, EPA shall: (i) approve, in whole or in part, the submission; (ii) approve the submission upon specified conditions; (iii) disapprove, in whole or in part, the submission; or (iv) any combination of the foregoing.
 - (2) EPA also may modify the initial submission to cure deficiencies in the submission if: (i) EPA determines that disapproving the submission and awaiting a resubmission would cause substantial disruption to the Work; or (ii) previous submission(s) have been disapproved due to material defects and the deficiencies in the initial submission under consideration indicate a bad faith lack of effort to submit an acceptable deliverable.

- (b) **Resubmissions.** Upon receipt of a notice of disapproval under ¶ 1.5(a) (Initial Submissions), or if required by a notice of approval upon specified conditions under ¶ 1.5(a), Respondents shall, within ~~60~~ 30 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the deliverable for approval. After review of the resubmitted deliverable, EPA may: (1) approve, in whole or in part, the resubmission; (2) approve the resubmission upon specified conditions; (3) modify the resubmission; (4) disapprove, in whole or in part, the resubmission, requiring Respondents to correct the deficiencies; or (5) any combination of the foregoing.
- (c) **Implementation.** Upon approval, approval upon conditions, or modification by EPA under ¶ 1.5(a) (Initial Submissions) or ¶ 1.5(b) (Resubmissions), of any deliverable, or any portion thereof: (1) such deliverable, or portion thereof, will be incorporated into and enforceable under the Settlement; and (2) Respondents shall take any action required by such deliverable, or portion thereof. The implementation of any non-deficient portion of a deliverable submitted or resubmitted under ¶ 1.5(a) or ¶ 1.5(b) does not relieve Respondents of any liability for stipulated penalties under Section [XV] (Stipulated Penalties) of the Settlement.
- (d) **Modifications by EPA.** If EPA proposes to modify a submission, such modifications are subject to the review and approval of the Engineer of Record for the RD.

1.6 Supporting Deliverables. Respondents shall submit each of the following supporting deliverables for EPA approval, except as specifically provided. Respondents shall develop the deliverables in accordance with all applicable regulations, guidance, and policies (see Section o) (References)). Respondents shall update each of these supporting deliverables as necessary or appropriate during the course of the Work, and/or as requested by EPA.

- (a) **Health and Safety Plan.** The Health and Safety Plan (HASP) describes all activities to be performed to protect on site personnel and area residents from physical, chemical, and all other hazards posed by the Work. Respondents shall develop the HASP in accordance with EPA's Emergency Responder Health and Safety and Occupational Safety and Health Administration (OSHA) requirements under 29 C.F.R. §§ 1910 and 1926. The HASP required by this RD SOW should cover RD activities. (Updates may be needed for RA activities prior to and after RA completion.) EPA does not approve the HASP, but will review it to ensure that all necessary elements are included and that the plan provides for the protection of human health and the environment.
- (b) **Emergency Response Plan.** The Emergency Response Plan (ERP) must describe procedures to be used in the event of an accident or emergency at the Site (for example, power outages, water impoundment failure, treatment plant failure, slope failure, etc.). The ERP must include:

- (1) Name of the person or entity responsible for responding in the event of an emergency incident;
 - (2) Plan and date(s) for meeting(s) with the local community, including local, State, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals;
 - (3) Spill Prevention, Control, and Countermeasures (SPCC) Plan (if applicable), consistent with the regulations under 40 C.F.R. Part 112, describing measures to prevent, and contingency plans for, spills and discharges;
 - (4) Notification activities in accordance with ¶ 3.7(b) (Release Reporting) in the event of a release of hazardous substances requiring reporting under Section 103 of CERCLA, 42 U.S.C. § 9603, or Section 304 of the Emergency Planning and Community Right-to-know Act (EPCRA), 42 U.S.C. § 11004; and
 - (5) A description of all necessary actions to ensure compliance with ¶ 3.7 (Emergency Response and Reporting) of the SOW in the event of an occurrence during the performance of the Work that causes or threatens a release of Waste Material from the Site that constitutes an emergency or may present an immediate threat to public health or welfare or the environment.
- (c) **Field Sampling Plan.** The Field Sampling Plan (FSP) addresses all sample collection activities. The FSP must be written so that a field sampling team unfamiliar with the project would be able to gather the samples and field information required. Respondents shall develop the FSP in accordance with *Guidance for Conducting Remedial Investigations and Feasibility Studies*, EPA/540/G 89/004 (Oct. 1988).
- (d) **Quality Assurance Project Plan.** The Quality Assurance Project Plan (QAPP) augments the FSP and addresses sample analysis and data handling regarding the Work. The QAPP must include a detailed explanation of Respondents' quality assurance, quality control, and chain of custody procedures for all treatability, design, compliance, and monitoring samples. Respondents shall develop the QAPP in accordance with *EPA Requirements for Quality Assurance Project Plans*, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006); *Guidance for Quality Assurance Project Plans*, QA/G-5, EPA/240/R 02/009 (Dec. 2002); and *Uniform Federal Policy for Quality Assurance Project Plans*, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005). The QAPP also must include procedures:
- (1) To ensure that EPA and its authorized representative have reasonable access to laboratories used by Respondents in implementing the Settlement (Respondents' Labs);

- (2) To ensure that Respondents' Labs analyze all samples submitted by EPA pursuant to the QAPP for quality assurance monitoring;
 - (3) To ensure that Respondents' Labs perform all analyses using EPA-accepted methods (i.e., the methods documented in *USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis*, ILM05.4 (Dec. 2006); *USEPA Contract Laboratory Program Statement of Work for Organic Analysis*, SOM01.2 (amended Apr. 2007); and *USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration)*, ISM01.2 (Jan. 2010)) or other methods acceptable to EPA;
 - (4) To ensure that Respondents' Labs participate in an EPA-accepted QA/QC program or other program QA/QC acceptable to EPA;
 - (5) For Respondents to provide EPA with notice at least 28 days prior to any sample collection activity, unless otherwise agreed upon and approved by EPA;
 - (6) For Respondents to provide split samples and/or duplicate samples to EPA upon request;
 - (7) For EPA to take any additional samples that it deems necessary;
 - (8) For EPA to provide to Respondents, upon request, split samples and/or duplicate samples in connection with EPA's oversight sampling; and
 - (9) For Respondents to submit to EPA all sampling and tests results and other data in connection with the implementation of the Settlement.
- (e) **Site Wide Monitoring Plan.** The purpose of the Site Wide Monitoring Plan (SWMP) is to obtain baseline information regarding the extent of contamination in affected media at the Site; to obtain information, through short- and long- term monitoring, about the movement of and changes in contamination throughout the Site, before and during implementation of the RA; to obtain information regarding contamination levels to determine whether Performance Standards (PS) are achieved; and to obtain information to determine whether to perform additional actions, including further Site monitoring. The SWMP must include:
- (1) Description of the environmental media to be monitored;
 - (2) Description of the data collection parameters, including existing and proposed monitoring devices and locations, schedule and frequency of monitoring, analytical parameters to be monitored, and analytical methods employed;
 - (3) Description of how performance data will be analyzed, interpreted, and reported, and/or other Site-related requirements;

- (4) Description of verification sampling procedures;
 - (5) Description of deliverables that will be generated in connection with monitoring, including sampling schedules, laboratory records, monitoring reports, and monthly and annual reports to EPA and State agencies; and
 - (6) Description of proposed additional monitoring and data collection actions (such as increases in frequency of monitoring, and/or installation of additional monitoring devices in the affected areas) in the event that results from monitoring devices indicate changed conditions (such as higher than expected concentrations of the contaminants of concern or groundwater contaminant plume movement).
- (f) **Construction Quality Assurance/Quality Control Plan (CQAP).** The purpose of the Construction Quality Assurance Plan (CQAP) is to describe planned and systemic activities that verify the RA construction will satisfy all plans, specifications, and related requirements, including quality objectives, and upon completion of the RA has satisfied the specification, requirements, and quality objectives. The CQAP must:
- (1) Identify, and describe the responsibilities of, the organizations and personnel implementing the CQAP;
 - (2) Describe the PS required to be met to achieve Completion of the RA;
 - (3) Describe the activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
 - (4) Describe verification activities, such as inspections, sampling, testing, monitoring, and production controls, under the CQAP;
 - (5) Describe industry standards and technical specifications used in implementing the CQAP;
 - (6) Describe procedures for tracking construction deficiencies from identification through corrective action;
 - (7) Describe procedures for documenting all CQAP activities; and
 - (8) Describe procedures for retention of documents and for final storage of documents.
- (g) **Transportation and Off-Site Disposal Plan.** The Transportation and Off-Site Disposal Plan (TODP) describes plans to ensure compliance with ¶ 3.8 (Off-Site Shipments). The TODP must include:
- (1) Proposed routes for off-site shipment of Waste Material;

- (2) Identification of communities affected by shipment of Waste Material; and
 - (3) Description of plans to minimize impacts on affected communities.
- (h) **O&M Plan.** The O&M Plan describes the requirements for inspecting, operating, and maintaining the RA. Respondents shall develop the draft O&M Plan in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017). The O&M Plan must include the following additional requirements:
- (1) Description of PS required to be met to implement the ROD;
 - (2) Description of activities to be performed: (i) to provide confidence that PS will be met; and (ii) to determine whether PS have been met;
 - (3) **O&M Reporting.** Description of records and reports that will be generated during O&M, such as daily operating logs, laboratory records, records of operating costs, reports regarding emergencies, personnel and maintenance records, monitoring reports, and monthly and annual reports to EPA and State agencies;
 - (4) Description of corrective action in case of systems failure, including: (i) alternative procedures to prevent the release or threatened release of Waste Material which may endanger public health and the environment or may cause a failure to achieve PS; (ii) analysis of vulnerability and additional resource requirements should a failure occur; (iii) notification and reporting requirements should O&M systems fail or be in danger of imminent failure; and (iv) community notification requirements; and
 - (5) Description of corrective action to be implemented in the event that PS are not achieved; and a schedule for implementing these corrective actions.
- (i) **O&M Manual.** The O&M Manual serves as a guide to the purpose and function of the equipment and systems that make up the remedy. Respondents shall develop the draft O&M Manual in accordance with *Guidance for Management of Superfund Remedies in Post Construction*, OLEM 9200.3-105 (Feb. 2017).
- (j) **Institutional Controls Implementation and Assurance Plan.** The Institutional Controls Implementation and Assurance Plan (ICIAP) describes plans to implement, maintain, and enforce the Institutional Controls (ICs) at the Site. Respondents shall develop the ICIAP in accordance with *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites*, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012), and *Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites*, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012). The ICIAP must include the following additional requirements:

- (1) Locations of recorded real property interests (e.g., easements, liens) and resource interests in the property that may affect ICs (e.g., surface, mineral, and water rights) including **accurate** mapping and geographic information system (GIS) coordinates of such interests; and
- (2) Legal descriptions and survey maps that are prepared according to current Texas Land Title Association (TLTA) Survey guidelines and certified by a licensed surveyor.

m) **DELIVERABLES SCHEDULE**

m.1 Applicability and Revisions. All deliverables and tasks required under this SOW must be submitted or completed by the deadlines or within the time durations listed in the RD **Deliverable** Schedule set forth below. Respondents may submit proposed revised RD Schedules for EPA approval. Upon EPA's approval, the revised RD Schedules supersede the RD **Deliverables** Schedule set forth below, and any previously-approved RD Schedules.

m.2 RD Deliverables Schedule*

	Description of Deliverable, Task	¶ Ref	Deadline
	Draft RD sequencing plan for a phased approach for the PDI	3.1	60 days after the effective date of the AOC.
	Draft First Phase PDI Workplan	3.3	In accordance with the EPA approved RD sequencing plan
1	Draft RDWP	0	180 120 days after EPA's Authorization to Proceed regarding Supervising Contractor under Settlement ¶ [13.c].
	Final RDWP	3.1	60 days after receipt of EPA comments on the draft.
	Draft Treatability Study Workplan	3.5	In accordance with the EPA approved RDWP
	Final Treatability Study Workplan	3.5	30 days after receipt of EPA comments on the draft.
	Treatability Study Evaluation Report	3.5	45 days after completion of the Treatability Study.
2	Draft PDIWP	j.2	As set forth in the EPA-approved RDWP, but no earlier than 90 60 days after EPA's approval of the RDWP
	Final PDIWP	3.2	45 days after receipt of EPA comments on the draft.
	Draft PDI Evaluation Report		30 days after receipt of validated data.
	Final PDI Evaluation Report		30 days after receipt of EPA comments on the draft.
3	Preliminary (30%) RD		As set forth in the EPA-approved RDWP, but no earlier than 180 90 days after receipt of validated data from the pre-design sampling and pilot or treatability studies
5	Pre-final (90%) RD	j.6	As set forth in the EPA-approved RDWP, but no earlier than 120 days after EPA comments on approval of the Preliminary RD
5	Draft Final (100%) RD	j.7	As set forth in the EPA-approved RDWP, but no earlier than 60 days after EPA comments on approval of the Pre-final RD
	Final (100%) RD	3.6	45 days after receipt of EPA comments on the draft.
	Progress Reports		Monthly, no later than the 15 th day of the following month; starting 60 days from the Effective Date of the Settlement

*

~~* The timing of the deliverables following the RDWP shall be contingent upon the scope of the work as defined in the RDWP including, but not limited to, PDI data collection requirements, and the performance of a treatability study/pilot project, as well as potential delays caused by access issues, and events outside of the control of the Respondents (e.g. availability of agency resources in support of technical workgroups).~~

n) STATE PARTICIPATION

- n.1 Copies.** Respondents shall, at any time they send a deliverable to EPA, send a copy of such deliverable to the State. EPA shall, at any time it sends a notice, authorization, approval, or disapproval to Respondents, send a copy of such document to the State.
- n.2 Review and Comment.** The State will have a reasonable opportunity for review and comment prior to:
- (a) Any EPA approval or disapproval under ¶ 1.5 (Approval of Deliverables) of any deliverables that are required to be submitted for EPA approval; and
 - (b) any disapproval of, or Notice of Work Completion under, ¶ 3.9 (Notice of Work Completion).

o) REFERENCES

- o.1** The following regulations and guidance documents, among others, apply to the Work. Any item for which a specific URL is not provided below is available on one of the two EPA Web pages listed in ¶ o.2:
- (a) A Compendium of Superfund Field Operations Methods, OSWER 9355.0-14, EPA/540/P-87/001a (Aug. 1987).
 - (b) CERCLA Compliance with Other Laws Manual, Part I: Interim Final, OSWER 9234.1-01, EPA/540/G-89/006 (Aug. 1988).
 - (c) Guidance for Conducting Remedial Investigations and Feasibility Studies, OSWER 9355.3-01, EPA/540/G-89/004 (Oct. 1988).
 - (d) CERCLA Compliance with Other Laws Manual, Part II, OSWER 9234.1-02, EPA/540/G-89/009 (Aug. 1989).
 - (e) Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potentially Responsible Parties, OSWER 9355.5-01, EPA/540/G-90/001 (Apr.1990).

- (f) Guidance on Expediting Remedial Design and Remedial Actions, OSWER 9355.5-02, EPA/540/G-90/006 (Aug. 1990).
- (g) Guide to Management of Investigation-Derived Wastes, OSWER 9345.3-03FS (Jan. 1992).
- (h) Permits and Permit Equivalency Processes for CERCLA On-Site Response Actions, OSWER 9355.7-03 (Feb. 1992).
- (i) Guidance for Conducting Treatability Studies under CERCLA, OSWER 9380.3-10, EPA/540/R-92/071A (Nov. 1992).
- (j) National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule, 40 C.F.R. Part 300 (Oct. 1994).
- (k) Guidance for Scoping the Remedial Design, OSWER 9355.0-43, EPA/540/R-95/025 (Mar. 1995).
- (l) Remedial Design/Remedial Action Handbook, OSWER 9355.0-04B, EPA/540/R-95/059 (June 1995).
- (m) EPA Guidance for Data Quality Assessment, Practical Methods for Data Analysis, QA/G-9, EPA/600/R-96/084 (July 2000).
- (n) Comprehensive Five-year Review Guidance, OSWER 9355.7-03B-P, 540-R-01-007 (June 2001).
- (o) Guidance for Quality Assurance Project Plans, QA/G-5, EPA/240/R-02/009 (Dec. 2002).
- (p) Institutional Controls: Third Party Beneficiary Rights in Proprietary Controls (Apr. 2004).
- (q) Quality management systems for environmental information and technology programs -- Requirements with guidance for use, ASQ/ANSI E4:2014 (American Society for Quality, February 2014).
- (r) Uniform Federal Policy for Quality Assurance Project Plans, Parts 1-3, EPA/505/B-04/900A through 900C (Mar. 2005).
- (s) Superfund Community Involvement Handbook SEMS 100000070 (January 2016), <https://www.epa.gov/superfund/community-involvement-tools-and-resources>.
- (t) EPA Guidance on Systematic Planning Using the Data Quality Objectives Process, QA/G-4, EPA/240/B-06/001 (Feb. 2006).

- (u) EPA Requirements for Quality Assurance Project Plans, QA/R-5, EPA/240/B-01/003 (Mar. 2001, reissued May 2006).
- (v) EPA Requirements for Quality Management Plans, QA/R-2, EPA/240/B-01/002 (Mar. 2001, reissued May 2006).
- (w) USEPA Contract Laboratory Program Statement of Work for Inorganic Analysis, ILM05.4 (Dec. 2006).
- (x) USEPA Contract Laboratory Program Statement of Work for Organic Analysis, SOM01.2 (amended Apr. 2007).
- (y) EPA National Geospatial Data Policy, CIO Policy Transmittal 05-002 (Aug. 2008), <https://www.epa.gov/geospatial/geospatial-policies-and-standards> and <https://www.epa.gov/geospatial/epa-national-geospatial-data-policy>.
- (z) Summary of Key Existing EPA CERCLA Policies for Groundwater Restoration, OSWER 9283.1-33 (June 2009).
- (aa) Principles for Greener Cleanups (Aug. 2009), <https://www.epa.gov/greenercleanups/epa-principles-greener-cleanups>.
- (bb) **[If Technical Assistance Plan provided for in SOW:** Providing Communities with Opportunities for Independent Technical Assistance in Superfund Settlements, Interim (Sep. 2009).]
- (cc) USEPA Contract Laboratory Program Statement of Work for Inorganic Superfund Methods (Multi-Media, Multi-Concentration), ISM01.2 (Jan. 2010).
- (dd) Close Out Procedures for National Priorities List Sites, OSWER 9320.2-22 (May 2011).
- (ee) Groundwater Road Map: Recommended Process for Restoring Contaminated Groundwater at Superfund Sites, OSWER 9283.1-34 (July 2011).
- (ff) Recommended Evaluation of Institutional Controls: Supplement to the “Comprehensive Five-Year Review Guidance,” OSWER 9355.7-18 (Sep. 2011).
- (gg) Construction Specifications Institute’s MasterFormat 2012, available from the Construction Specifications Institute, <http://www.csinet.org/masterformat>.
- (hh) Updated Superfund Response and Settlement Approach for Sites Using the Superfund Alternative Approach, OSWER 9200.2-125 (Sep. 2012).
- (ii) Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites, OSWER 9355.0-89, EPA/540/R-09/001 (Dec. 2012).

- (jj) Institutional Controls: A Guide to Preparing Institutional Controls Implementation and Assurance Plans at Contaminated Sites, OSWER 9200.0-77, EPA/540/R-09/02 (Dec. 2012).
 - (kk) EPA's Emergency Responder Health and Safety Manual, OSWER 9285.3-12 (July 2005 and updates), http://www.epaossc.org/_HealthSafetyManual/manual-index.htm.
 - (ll) Broader Application of Remedial Design and Remedial Action Pilot Project Lessons Learned, OSWER 9200.2-129 (Feb. 2013).
 - (mm) Guidance for Evaluating Completion of Groundwater Restoration Remedial Actions, OSWER 9355.0-129 (Nov. 2013).
 - (nn) Groundwater Remedy Completion Strategy: Moving Forward with the End in Mind, OSWER 9200.2-144 (May 2014).
 - (oo) Guidance for Management of Superfund Remedies in Post Construction, OLEM 9200.3-105 (Feb. 2017), <https://www.epa.gov/superfund/superfund-post-construction-completion>.
- o.2** A more complete list may be found on the following EPA Web pages:
- Laws, Policy, and Guidance <https://www.epa.gov/superfund/superfund-policy-guidance-and-laws>
- Test Methods Collections <https://www.epa.gov/measurements/collection-methods>
- o.3** For any regulation or guidance referenced in the Settlement or SOW, the reference will be read to include any subsequent modification, amendment, or replacement of such regulation or guidance. Such modifications, amendments, or replacements apply to the Work only after Respondents receive notification from EPA of the modification, amendment, or replacement.